AVOIDING CONTACT WITH TELEPHONE PLANT ENERGIZED BY FOREIGN POTENTIAL

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CONTENTS PAGE

1. GENERAL 1

2. HAZARDS AND EVIDENCES OF CONTACT 1

3. PROCEDURE UPON EVIDENCE OF CONTACT 2

4. PRECAUTIONS – HAZARDOUS STORM CONDITIONS 3

1. GENERAL

1.01 This section outlines safety precautions and reporting procedures employed by testroom and central office (c.o.) forces to minimize the possibility of electrical shocks from telephone plant energized by foreign potential.

1.02 Precautions for preventing electrical contacts while working near light and power equipment are covered in sections of the Bell System Practices dealing with the work operations near that type of equipment.

Precautions for preventing shocks from other power sources, associated with equipment such as testing apparatus, radio transmitters, carrier equipment and amplifiers in the toll testroom are given in the BSP Sections that cover the work operations for each item of equipment.

2. HAZARDS AND EVIDENCES OF CONTACT

2.01 Telephone plant most likely to become energized and the most dangerous when energized includes ungrounded aerial plant, open wire, cable, drop wire, and cable suspension strands.

2.02 The probability of electrical contact is increased considerably during and following heavy wind and rain storms, earthquakes, and floods; however, contacts may occur during fair weather due to improper clearances, motor vehicle collisions with poles, fires, and other causes.

2.03 Contacts are classified as "known" or "suspected" depending on the evidence available.

2.04 KNOWN contacts include:

(a) Wires seen in actual contact.

(b) Burns in bridle wires, drop wires, cable protectors, and cable terminal lugs at cable-open wire junction poles. There may also be evidence of burns in the cable, such as exploded lead sheath in the cable stub, holes burned in the sheath, melted lead droppings, and burns at the cable rings or clamps.

(c) Central office heat coils or protector blocks operated. Replaced coils or blocks operated again as soon as it is safe to work on the MDF.

(d) Foreign potential found by the testboard on a line under test.

(e) Flames, sparks or smoke seen at central office main frame and heat coils operated.

2.05 SUSPECTED contacts include:

(a) Protector blocks operated at cable-open wire junction indicating above normal voltage and current.

(b) A number of central office heat coils or protector blocks found operated in the same cable. Replaced coils do not operate. Lines test open indicating line probably broken down or burned in two.

(c) Electric company reports of trouble on electric circuits where telephone plant is principally in open wire.

(d) Police, fire department, or subscriber reports of wires down, tree limbs on wires, electrical displays, etc.

(e) Electric burns found in cable while investigating reported trouble.

(f) Loud 60-cycle hum heard by testboard on line under test.

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(g) Relays vibrating in peculiar manner.

NOTE: Evidence of above normal voltage and current at protectors would include: burned insulation on wiring, exploded fuses, severely burned or welded carbons, melted parts, and burned or smoked areas on bases or mats.

3. PROCEDURE UPON EVIDENCE OF CONTACT

A Testboard

3.01 The testroom employee aware of a known or suspected contact immediately notifies his supervisor who transmits the information per local instructions.

3.02 The testboard cautions any outside employee who has reported a contact or who is being dispatched on a reported trouble to follow safety precautions for avoiding contact with energized plant.

3.03 If Company employees are in the trouble area, the testboard man notifies his supervisor who immediately warns the employees by telephone or sends someone to warn them of the danger. If his supervisor is not immediately available, the testboard man must notify the employees concerned as quickly as possible.

3.04 The testroom employee receiving a report of a contact must immediately warn any people working near the main frame involved.

3.05 All employees working in K, L, or N carrier huts, radio and microwave locations, and at pole-mounted N repeaters are notified of the hazardous condition and cautioned to avoid contact with any equipment or line appearance on which foreign potentials might be present.

3.06 Unless the report came from the electric company, it should be questioned regarding any related trouble it may be experiencing. When a Telephone Company employee has located the contact, the testboard notifies the electric company and cooperates with it to clear the contact.

3.07 Instruct employees reporting to toll testboards about foreign potential contacts as follows:

(a) If location of contact is not known, give all available information on the case to the testboard man.

(b) If the lead is short, inspect from the ground for contact at the joint-use portion of the lead, including overbuilds and crossings, service lines and joint-use spurs on private property.

(c) Call back at stated intervals to report progress. Use a SAFE telephone when calling in. (Any standard installation, i.e., residence, business, or coin box telephone, is safe.) A test set (dumb-bell) is NOT a safe telephone when foreign potential contact has been reported.

(d) If the lead is long, look for other evidence of known contact before continuing with a complete inspection of the lead. The condition of the cable-open wire junction terminal and any line protectors at the terminal should be inspected.

(e) Stay on the case until the contact is removed by the electric company repair crew and then report back. Protect the public from down wire or contact. If progress of repair appears slow, report back after a stated interval for further instruction.

3.08 Consider as swinging or intermittent contacts, all known cases that apparently have cleared.

3.09 The trouble ticket should be clearly marked to indicate that a known contact or suspected contact with power exists.

3.10 When a contact has been removed, or complete inspection has disclosed that no contact exists, advise all involved parties that the plant is in the clear.

B Other Central Office Employees

3.11 If any contact evidence is found, central office employees (including outside plant employees who make tests from the central office main frame) must do the following:

(a) Notify supervisor.

(b) Notify other employees who may work on frame terminations.

(c) Wear rubber gloves in case it is necessary to replace heat coils to determine if evidence of a "known" contact exists.

(d) If evidence of a known contact is found, place a suitable warning on the central office frame terminating the cable section involved. Avoid all further contact with associated frames until the trouble has been cleared and the warning has been removed.

(e) The trouble ticket should be stamped or clearly marked to indicate that a known or suspected contact with power exists.

4. PRECAUTIONS – HAZARDOUS STORM CONDITIONS

4.01 During hazardous storm conditions testboard men caution all outside men dispatched by or reporting to them to follow the precautions outlined in the Bell System Practices.

4.02 Outside employees are instructed to stay out of open wire leads during electrical storms and to make all calls during such storms from "safe" telephones.

4.03 Supervisors must warn all people working on or near main distribution frames to be alert for and report immediately any evidence of foreign potential contact.

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